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SCHOOL AND SOCIETY

Volume XIII SATURDAY, MAY 28, 1921 Number 335

MERITS AND DEFECTS OF PRESENT PRACTISES OF COOPERATION BETWEEN UNIVERSITIES AND INDUSTRY

ONE of the most important of the principles of efficiency is "That standards must be determined, policies formulated, and terms defined." There is no field of human endeavor where the use of this principle is needed more than in the field of education. We proclaim education as a science but our methods and practises are still far from scientific.

THE FUNCTIONS OF A UNIVERSITY

This being the case, let us, then, in the consideration of the complex topic "Merits and Defects of Present Practises of Cooperation Between Universities and Industry" give a few moments to a consideration of the one term in our topic that is least clearly defined, namely, "Universities."

It is quite certain that there are many people, leaders in university activities, who will at once raise the question, "Should a university attempt to cooperate with industry?" and it is equally certain that many would quickly dispose of the entire question with a strong and decided negative. Among these we would expect to find a certain well known president of a famous university who establishes the following characteristics by which a university should be distinguished. So let us first listen to the voice of the classicists:

1. Zeal for the advancement of learning.
2. The universities are the natural conservators of educational experience.
3. The discovery and development of unusual talent.
4. The university is a place of plain living and high thinking. (Those of us who have intimate first-hand knowledge of the failure of university salaries to keep pace with the high cost of living will have no difficulty in agreeing with the first part of this statement.)
5. Devotion to literature.
6. A place for the defenders of ideality and the maintenance of spirituality.
7. A high standard of professional learning.
8. *Finally, among the merits of a university is the cultivation of a spirit of repose; and to be a most delicious retreat for learned leisure.*

Still another point of view is that of the pedagogues; they look upon the university as the crowning climax of our public-school system; as the aim of the elementary school is entrance to the high school, so the aim of the high school is to prepare for entrance to the university.

THE GROWTH OF THE SOCIALIZED CONCEPTION

Both of these points of view ignore the fact that the university is a dynamic part of our rapidly developing and evolving social order. The ideal of a university never has been static. It has always kept pace with the ever-growing, ever-changing needs of the society of which it is a part and whose sole purpose it is to serve.

In this country the first ideal of a university was that of the English college, a place for the training of gentlemen of leisure, the core of whose learning was Latin, Greek and the classics. Following the Revolutionary War we find the beginnings of the social period when the professional vocation schools of law, medicine and theology were established as an accepted part of the university. Third, the year 1850 marks the acceptance of the scientific

schools as a part of the university. The passage of the Morrill Act of 1862 marks the beginning of the schools of agriculture and the growth of our great western state universities with their colleges of engineering.

None of these progressive developments were made without much opposition from those in authority, but always the vital and dynamic has had its way against the formal, didactic and static.

Paralleling this growth we had developed the four modes of university organization which we must consider:

1. Those which are organized and conducted on the basis of the historic classical colleges.
2. Those that are avowedly ecclesiastical.
3. Those founded upon private benefactions and endowments.
4. Those established in the name of the various states.

All of these various elements of development and these four types of organization must be kept in mind when considering our topic as they have a decided bearing on our discussion.

The real nub of the question of cooperation between the universities and industry lies in our conception of the function of a university. Is it a "delicious retreat for learned leisure"? Is its main function "appreciation of the classics"? A place of "intellectual discipline," of "devotion to literature" and the "cultivation of a spirit of repose"? Or is it a service institution, an institution the chief ideal of which is training for work and service, the development of the individual, the development of the state and the conservation and development of its resources, both human and material? Shall it be a leader or a follower? Shall its face be turned towards the past or towards the future? If we accept the ideal of the classicists the answer to the question of cooperation between the universities and industry must be a decided "No." But if we accept the socialized conception of the university, we face a wonderful field of development, one in which the university with its trained workers and thinkers, scientific, impartial and non-partisan, can do a great work in helping to solve many of the perplexing and vexatious problems that have developed with the phenomenally rapid growth of our industrial civilization. Along with this have come serious maladjustments in other phases of our common evolution such as education, economics, law, human rights and liberty, the development of class consciousness and many other serious questions of our times.

UNIVERSITY COOPERATION PRECEDENTS

We have plenty of precedents already well established for us in our demand for a closer cooperation between the universities and industry. For many years there has been the closest kind of cooperation between the university and agriculture. We are quite accustomed to seeing great universities send out special trains which tour the state for months cooperating with the farmer and giving him advice, instruction, and demonstrations, running the entire gamut of agriculture in the best methods of farming, from stump pulling and creosoting fence posts to ridding hogs of lice and fields of gophers.

The universities cooperate in splendid fashion in satisfying the military needs of our state. In many of our largest universities, a program of training covering two years is required of all entering students. We are accustomed to, and accept without question the university free medical dispensaries and clinics of many kinds, just as we accept the university student as assistant in them. The newest of our university colleges and schools, those of busi-

ness, finance and journalism, from their inception accepted as fundamental the principle of cooperation. Students in journalism as part of the university career regularly report to city editors for assignments. We find university students on regular class assignment working in banks, stores and offices. The small country towns with their struggling churches in many cases owe the existence of these churches to the cooperation of the divinity schools in the matter of preachers and evangelists. With the adoption of the "case method" in our law schools, there has developed a splendid system of cooperation with legal aid societies, juvenile courts, domestic relations courts, etc. Our departments of sociology in their splendid social work, of Americanization, and social surveys, have a well established practise of cooperation with state and community social agencies. In education, that most conservative field, we find the colleges of education conducting school surveys, "cooperative research bureaus" and testing and rating thousands of pupils in their educational clinics. In fact there is hardly any field of human endeavor that the university does not materially cooperate in, except the field of industry, and there we find (generally in the Extension Division) only slight and scattered beginnings of what we hope will prove to be a vital and important cooperation for both universities and industry.

THE BEGINNINGS OF UNIVERSITY COOPERATION WITH INDUSTRY

The logical university agency for cooperation with industry is the engineering college. This type of college secured its present unquestioned place in university circles about 1850 as the result of a long and bitter fight against the classicists who dominated the university thought and administration of that time. The engineering colleges then represented the vital and practical as against the traditional and formal, but with the assurance of their proper place in the university sun they have become nearly as formal, traditional and didactic as the classicists themselves.

The engineering colleges have, with a few outstanding exceptions, quite generally failed to keep pace with the needs of society, the latest and best educational thought, and the best and most advanced practises of their profession. The majority of engineering college shops are to-day using exercises that were first exhibited at the Philadelphia Centennial in 1876. Furthermore they have failed to take advantage of vital opportunities for development along new lines and in new fields of human endeavor that are logically theirs to develop. They are still graduating a surplus of machine designers in the face of a shortage of managers. Industry needs scientific methods and knowledge and keen trained minds. The engineering colleges need the revivifying contact with industry and its multiplicity of real problems that in themselves are worthy of the most serious efforts of our best engineers and educators. That this condition is quite well understood by the leading engineering educators is shown by the formidable list of working committees maintained by the Association for the Promotion of Engineering Education.

A careful examination and comparison of present and past practises in engineering education along with new and old curricula, courses of study, content, and methods of teaching, furnish plenty of evidence that many of our engineering educators are still thinking quite generally in terms of the needs of decades ago, instead of in terms of the vital needs of the indus-

tries of today. Their courses of study give hardly the slightest indication of any recognition of the wide-sweeping and profound changes that have taken place during the past decade in our social and economic life, our manner of living and earning a living. In but very few of their courses can we find anything but the most casual mention of such vital and significant movements as functional organization, functional committee organization, scientific management, time study, motion study, personnel management, industrial relations, employment management, foremanship training, forms of industrial production, education, etc. It is true that some colleges of education and some schools of business offer short courses in these subjects, but in the majority of cases they are given as theoretical courses without any vital contacts or real problems and in nearly all cases are taught by men without any practical experience in the subject they teach.

However, there are some bright and luminous spots in this otherwise gloomy picture. We are all well acquainted with the cooperative plan of Dean Schneider of the University of Cincinnati which has in its limited field been very successful. But even this outstanding example has been followed more by our high schools and grammar schools than by our colleges and universities. The scheme of Dean Schneider, splendid as it is, is hardly anything more than a scheme for cooperative shop work whereby the university is saved a large amount of expenditure for shop equipment, and where the student has the great advantage of doing his shop work under real productive conditions instead of the usual archaic engineering shop exercises.

The Carnegie Foundation at the request of the Society for the Promotion of Engineering Education, the four great engineering societies, and the American Chemical Society undertook an exhaustive study of engineering education. The reports of this study and the proceedings of the engineering societies mentioned give much promise for future developments along this line.

Decidedly the most promising plan of cooperation with industry is that worked out and begun by Dr. Hollis Godfrey of Drexel Institute, Philadelphia. From the comprehensiveness of this plan, the specificness of its details, and the method of accomplishment, it is quite evident that Dr. Godfrey has thoroughly surveyed the field, sensed the vital needs of industry and organized his plan to take advantage of this splendid opportunity for vital cooperation between his institute and industry. The following statement is taken from the August, 1920, *Monthly Labor Review*, Bureau of Labor Statistics. Dr. Godfrey first says that the necessity for such cooperation has grown out of three great world needs:

> *First*, the need of using to the utmost the existing machinery of production and distribution to meet the world shortage of goods out of which have come the high cost of living, social unrest, and industrial confusion; *second*, the need of developing rapidly new machinery of production and distribution to meet the shortage and the demands of the future; and *third*, the need of producing a large number of properly trained management men (mind workers in industry from foreman to president) essential for the complete utilization of our present industrial resources and for the speedy development of new industrial capacities. The satisfactory solution of the first two needs, therefore, depends in large measure upon meeting effectively and as speedily as possible the third. Men trained for industry in a well-ordered way will not only aid directly the processes of producing and distributing goods, they will help indirectly by relieving the serious strain which abnormal conditions have placed upon both executives and operatives in industry.

The originators of this cooperative plan recognized the fact that no training for management could be effective unless combined with actual experience in the shop, and, furthermore, that specific training for specific jobs must be had in addition to a general knowledge of any industry. They therefore conceived the idea of utilizing all available resources both in industry and in the colleges and of encouraging the development of new ones.

To accomplish this purpose it was proposed that a set of specifications prepared jointly by industry and the colleges should be drawn up setting forth industry's needs and education's ability to meet them. Accordingly data were collected and put into shape, and, in addition, an intensive personal survey was made of a group of great industries and of a group of colleges in the east, middle west, the southwest and the south. This survey, covering a period of six weeks, was based upon the work already done.

The plan itself has been formulated with great care. More than 100 college executives were consulted regarding it and more than 30 college executives and 70 industrial executives worked on the specifications. As a result many valuable suggestions and much constructive criticism were received and embodied in the final draft. The joint specifications were approved by the Technology Clubs Associated at its meeting in Philadelphia, March 26 and 27, 1920, and, up to May 15, 200 firms and corporations had also approved and subscribed to the plan as set forth in them.

Industry and the colleges will be brought together for the accomplishment of the end defined in the plan by a joint industrial-educational body, or cooperative committee in which industry will be represented by an industrial agency to be known as the Council of Management Education, and education will be represented by the American Council on Education.

The work of the Council of Management Education is to be that of determining for each industrial group represented in the movement the needs of industry as regards quantity and quality of management men, of keeping these requirements up to date year by year, of specifying the types of men to be produced by the colleges, and of helping to improve the processes and increase the resources for developing the men desired. The Council of Management Education will also determine and publish such educational opportunities as can be offered undergraduates through cooperative summer courses. It will also undertake to inform graduates of the opportunities in the industrial field for management work. . . .

The American Council on Education, on the other hand, is prepared to bring educational opinion to bear upon the strictly educational problems involved in this great undertaking, and to serve as a medium of communication between the colleges and industry. . . .

The work of the cooperative committee will be that of a clearing house in which the specifications of industry, of jobs and men will be refined and clarified. It will also decide upon the best educational processes for the accomplishment of specific ends. In a word, it will review and coordinate the work of cooperation undertaken by the two organizations already discussed.

It is quite clear that Dr. Godfrey and his associates have sensed the great need of industry for trained managers of men. Engineering educators in the past and quite largely at present seem quite content to train technicians in "Material" and "Machines" which are only two of the seven "M's" of industry, the others being, "Methods," "Management," "Markets," "Money" and "Men." Each of these seven "M's" presents a wide but very specific field for university cooperation.

The University of Chicago in its school of business has started courses for purchasing agents. Carnegie Institute of Technology is doing some splendid research work in the field of job analyses. Harvard has started an extensive plan of cooperation with the industries through its school of business and its vocational bureau. With these slight beginnings there will undoubtedly be many others following in their footsteps. With the organization of the many national associations of producers in varied lines of industry, we have a group of men to cooperate with that will equal in dignity the faculty of any university.

DEFECTS IN OUR METHODS

The one outstanding defect in our present methods of cooperation between the

universities and industry is our form of university administration. This defect has been quite definitely outlined by Baldwin in his book, "The Educator's Problem from the Business Man's Standpoint." Baldwin says,

> Autocracy in government is rapidly going out of style, and along with it, if we are wise, will go autocracy and aristocracy in educational administration and educational methods. A new vision of interpretation, coordination and cooperation must come to educational leaders and the rank and file of educational workers, or they will fail in the service they can render if they will it, in the New Democracy.

Mr. Baldwin is supported in his attitude by Frank A. Vanderlip, who in his book, "Business and Education," says:

> Even though men bear learned degrees and have shown rare ability in acquiring a special sort of knowledge prescribed by a particular system of education, it may not follow that those same learned men are the best judges of what should be the trend of that educational system. If they alone are left to shape the further development of that system, I believe its growth would be less likely in all respects to follow the best lines than would be the case if its development were in a measure shaped by men who have acquired another form of education and have scored success in other fields. The professional educator is quite as likely to become narrow and provincial as is any other specialist. The president of one of our great eastern universities told me a few days ago that he had been making an exhaustive examination of the history of his institution and he had discovered that every great progressive step which the university had taken in one hundred and fifty years had been against the protest and the opposition of the faculty. The trustees from time to time brought forward new plans of organization and broader ideas regarding the curriculum. The faculty had in every case voted adversely, and when the changes were made, they were made only by the trustees taking the responsibility upon themselves. Even Alexander Hamilton, with his consummate wisdom, once worked out a plan of reorganization for the university, only to have it meet with the usual vote of emphatic protest from the faculty, but final adoption by the trustees.
>
> Now, in the light of years of experience, these changes are seen to have been wise in the main. The unavailing protests of the learned men who made up the institution's faculty are discovered to have sometimes been based on narrow grounds lacking the impersonal view and judgment that should have been brought to bear upon the questions.
>
> This is only one illustration of many that might be given of the tendency toward narrowness on the part of the specialist, of the wisdom there is in larger counsels, and of the value of educational progress that may come with the judgment and experience of men of large affairs and wide interests. Schools are for the education of all sorts of men, and in directing their development there is need of almost as many points of view and of as varied experiences as there are classes of men to be educated.
>
> We have of late heard much of the call of the employer for skilled men to supervise work. We have heard employers marvel that, while the lowest paid ranks of their workmen are fully supplied, they have the greatest difficulty in finding men to fill the higher positions. The reason is of course most obvious. Men need training to become skilful. They must have variety of work if their outlook and technical skill are to have breadth. They must know something of principles if they are to have original ideas of value. I believe that we have failed utterly to grasp the problem of the relation between education and our industrial development and prosperity.
>
> To do all this does not mean the "commercializing" of our educational system. There is no need for opposition even from those who hold that it is not the place of the schools to teach youths how to earn a livelihood. Those educators who lay strongest emphasis upon such phrases as "character formation," "mental discipline," and "harmonious cultivation of the faculties" may continue to hold firmly to those views and at the same time welcome an auxiliary school system which, without curtailing their ideal culture courses, will give after the ordinary period of school life is over the opportunity for valuable practical instruction.

POLICIES AND STANDARDS

Finally, before planning any elaborate scheme of cooperation between the universities and industry we must formulate and adopt certain standards and policies. The

following are merely tentative and presented as a basis for discussion.

1. That the university is primarily a service institution established and maintained for the sole purpose of serving the needs and satisfying the demands of our rapidly evolving civilization.

2. That we firmly believe in culture through the vocations.

3. That we recognize three phases of this general university function—(*a*) research and discovery, (*b*) teaching, or the distribution of knowledge, (*c*) administration of the university as an institution. The last should not dominate to the extent that it nullifies the other two more important functions, but must be adapted to assist rather than hinder.

4. That the industries must not be used as an experimental laboratory for the main purpose of solving the theoretical problems of university students, but that the scientific knowledge and methods and training now available in the universities shall be used to solve the problems of industry.

5. That the universities should lead in this field and not be content to follow.

6. That arrangements should be made whereby men who have made a success in any field of industry might conduct university courses, regardless of their possession or non-possession of academic degrees.

7. That colleges of engineering establish advisory committees of successful men of industry to assist in formulating courses of instruction and working out plans for cooperation.

8. That administrative difficulties shall not be the negative deciding factor of any plan, or in the conduct of any course, looking toward closer cooperation between the universities and industry.

9. That certain university courses shall be thrown open to selected workers in industry regardless of previous academic training.

10. That this new field of cooperation offers for the universities an unequaled opportunity to develop the use of the scientific method in education in cooperation with the scientific methods now used in industry.

11. Finally that we accept as our working guide the spirit of the following statement made by Dr. Kerschensteiner in his book, "The Schools and the Nation." "Education must always have one foot on the ground, the firm ground of work, for it derives its strength only from earnest, intensive, practical, productive activity."

ARTHUR FRANK PAYNE.

UNIVERSITY OF MINNESOTA

WHO IS THE TEACHER'S EMPLOYER?

To all who hold, with a recent writer in these pages, that the teacher "must conform to the will of the majority and, so far as overt act or influence is concerned, uphold the social order under such democratic auspices as now represent the democratically expressed will of the majority," the situation over the whole country is commended for illumination of their position. In a number of state universities the members of the faculties have been for some months in a state of suspense while the legislatures have been deciding what should be taught in the schools and colleges and what should be the qualifications of those who were to do the teaching. In a number of states, the public schools have been subjected to the same suspense while the legislature was deciding whether teachers could discuss such questions as the ways in which the people might change their form of government, if they desired to change it. On the whole, the "democratically expressed will of the majority" has been steadily pressing, this present legislative year, toward fulfillment of the contention of Karl Marx that the schools of an age must become definite tools of propaganda for the practises of that age, permitting no

hint of the possibility of a better organization of society to trickle through. Of course, all who feel assured that we have now reached the best possible organization of our social order will be glad to support this Marxian contention; they will say that the schools ought to teach our children that the present social order is perfect; the children ought to be thoroughly indoctrinated with the present, and prepared to defend present conditions with "their lives, their fortune and their sacred honor." All who believe that the teacher is an employee of the public, that is, of the administration-in-power, will be glad to know how completely they illustrate what Karl Marx said was bound to happen. At this point, the most conservative of conservatives finds himself in complete agreement with the most radical of radicals. At any rate, he finds himself serving as an excellent illustration of the arguments of the radicals.

A considerable number of more or less amusing, or tragic, consequences of these doctrines begin to appear. For example, the word "revolution," once highly respected among Americans, some of whom even attempted to enhance their own prestige by calling themselves sons or daughters "of the Revolution," is in danger of being listed by the censor. A respectable citizen of the republic recently railed bitterly against the growing interest in Abraham Lincoln, because as he said "It represents an organized effort to disparage the reputation of Washington, who, in spite of everything that can be said about him, *was* a rebel and a revolutionist." But certain efforts are being made to relieve Washington of that taint upon his otherwise fair reputation. For example, it is reported that a lecturer in New York city has been speaking, recently, on the subject "The Flag." He begins with a discussion of the British flag, tracing its origin and gradual formulation. He brings his story down to the latter part of the eighteenth century, and then says: "About this time a branch of the British people resident in America determined to have a flag of their own, and so they gave up the use of the emblem of the mother country." In this fine way the whole story of the "Revolution" is easily avoided, and the children are saved from exposure to the contagion of a very dangerous word.

For it is a dangerous word—that word Revolution. A story is current in a western state that a member of the legislature has moved to amend the history books that tell of the "Industrial Revolution," by striking out the word "revolution" and inserting the word "evolution." To be sure, it's only a few years ago that the word "evolution" was the dangerous word, while "revolution" was quite a respectable term. But *tempora mutantur!* And if "the will of the majority, democratically expressed" through the legislature should decree a change in the respectability of the two words, no teacher will question the right of the legislature to settle the matter. Or will he?

Then there are certain things which ought not to exist in this world. For example, there are the I. W. W.'s. Would it not be well to legislate the fact of their existence out of existence? May not the legislature, with a wave of its wand, blot out the *fact,* and direct the writers of the books and the teachers to write and teach *as if?* And, anyhow, are there not enough beautiful and good and true things in the world upon which to nourish the tender minds of the children, without seeking to fill them with such sordid materials?

As for this abnormal hunger for *facts,* what has the teacher to do with such things? In the good old days teachers did what they were told to do; or if they didn't, they were haled before the council. And the best that can be said about facts is that they are one of the luxuries of life, to be enjoyed only by those who can afford luxuries. Teachers, who are the employees of the public, are notoriously underpaid and therefore they can scarcely expect to be able to afford such luxuries; at least not on the salaries paid by the public. If they want to enjoy facts, let them look for the positions which provide salaries large enough to finance their luxuries and for employers who approve of their carryings-on. But why should any one expect the public to

pay for his private luxuries? Does not this reasoning seem perfectly obvious? It does to many, including certain groups of the public, members of legislatures, editors of small-town newspapers (some of them in big cities) and even some teachers. Intolerance makes strange bed-fellows.

The whole basic trouble seems to grow out of a fallacious conception as to who the teacher's employer really is. The advocates of this intolerant doctrine hold that the "public" is the employer of all teachers in any sort of public school, whether elementary, secondary, collegiate or university. Of course this doctrine can be held by no one who allows himself the luxury of a moment's serious thinking. Such a doctrine would make education an utter chaos, except in the realm of those sterile materials which are now slowly reducing our schools to the level of dust-machines. Who is this "public"? The teachers in many states would like to know; and they can not know until after the legislature has adjourned and gone home, and the governor has exhausted the legal limit of the time within which he may sign or veto bills. And, indeed, they may not know even then, for the whole matter may have to go into elaborate investigation and judicial determination. In the meantime, the morale of the teaching force may be completely destroyed; the best scholars and teachers, in the disputed fields, may become discouraged and demoralized. Let any one who wants to defend that sort of program be well advised of the evils of it, its defects and contradictions. For such a program is not democratic at all. There can be no hope for democracy in such a form of educational control. Its whole meaning and incidence are anti-democratic. It is the beginning of an insidious and infamous *kultur*,—an education controlled by a politically entrenched fragment of the public whose invisible but real purpose is the control of the course of development of the economic institutions of the state. Democracy in education does not include, involve or imply the control of educational institutions or of the avenues of information by politically manipulated forces. No argument can be made that can justify the effort now generally in evidence to subordinate the intelligence of the community to the manipulations of political parties or majorities. Such arguments and programs are functions of autocracies, whether monarchical or oligarchical, but never of democracy.

American education is now in the gravest danger it has known since the beginnings of the public schools. The immeasurable significance of education as *propaganda* was made plain by the war. The effective controls of the future will be by means of education as propaganda. The decisive contests of the future will be for the control of education for its uses as propaganda and for the control of the schools and other means of public instruction as bases of propaganda. All the forces of invisible government are busily engaged in building up the structure of such controls. Fearful people are helping; small minds everywhere are enjoying the sense of having a share in a great work, just as the peasants enjoyed tearing the thatch off their own roofs to add to the flames that were consuming John Huss. Even some teachers are helping in these processes, ignorantly supposing they are serving God and the state; but such teachers are mostly the victims of catch-words and "question-begging epithets."

Is it possible to suppose that some teachers are knowingly lending their support to this campaign of intolerance and bigotry? The number of such must be very small. But there are many who are passive, "neutral," at this time. The brunt of the fight for freedom of teaching is being carried by a small number of teachers to-day. I have no means of knowing how many teachers are under suspicion over the country at large, to-day, though a recent statement of the American Legion places the number of "undesirables" at 8,000, in all the schools. Of course, not all of these are in danger of being dropped,—though under the reign of the "Lusk laws" in New York state, the dismissal of teachers will cease to have any taint of judicial procedure and will become a purely administrative function of the agents of the department of education.

But beyond the few thousands who are in

danger of being dropped from the schools are the large numbers who are being worried into a paralytic ineffectiveness or who have reached the stage of complete carelessness; and those other thousands of perfectly balanced teachers who give not the snap of their fingers which way any particular fight goes, since they are ready to swing either way, as the tide ebbs or flows.

Not so very long ago, in a certain large university the following authentic conversation was overheard. Said A to X, "X, when the regents meet next week in their annual meeting, you are going to get hurt." Said X, "Why, what do you mean?" "I mean," said A, "that you are going to lose your job." X seemed more or lesss stunned for a moment, but presently he replied, "Well, a man doesn't have to have a job, does he?" It was now A's turn to be surprised; but he soon recovered his wits and retorted rather warmly, "Well, if that's the way you look at things, go ahead and do as you please; but you can believe me, I'm going to be good."

But is not that the necessary outcome of the doctrine that the "public" is the employer of the teachers? Many teachers are being destroyed, to-day; some by reason of their devotion to ideals of truth and service; some by their decision to be "good"; though of course the incidence of the destruction varies. But as long as the doctrine that the "public" is the employer of teachers holds, just so long will these destructive processes work their devastating effects. Scholarship can have no real chance; self-respect must be laid on the shelf; and teachers must learn to "play the game," whatever that may mean, of intellectual or moral stultification. The only alternative is that of fighting a losing battle, and few care to take the rôle of the martyr in these days.

Let all who hold that teachers must take their cues from the opinions of the current administration, from "that majority to whom we have, at least temporarily, entrusted directive responsibility," be well instructed as to the inevitable outcomes of their doctrines. The fight for freedom of science and of teaching has been a long fight against the fears of the majority and their efforts to suppress the truth, to suppress that inner light that shines in the aspirations and purposes of the solitary searcher on the frontiers. It is a curious doctrine that now we are to deny the long fight against these things and submit to the control of the majority. We have reached such areas of freedom and truth as we now possess because men have not submitted to those majority controls, but have "kept the faith," going to death for their ideals, or even in some few cases—losing their jobs! We have not yet reached the time when the majority, played upon by prejudice and fears, whipped into line by ignorant editors and politicians, swayed by programs that are economically determined and politically maneuvered, may be counted on the side of truth and freedom. The hope of science and freedom is found in fighting, or defying or ignoring the threats of majority control.

Nothing more subversive of the hopes of democracy has been suggested in the democratic decades than this doctrine that our teachers shall freely submit to the control of the majority "to whom we have at least temporarily entrusted directive authority." The very phrasing of the statement implies its inherent impossibility as a rule of conduct; present conditions prove its subversive character; its only service is to define anew the old, old fight and to call out the latent energies of democracy for another battle of the long campaign.

Joseph K. Hart

THE STUDENT MOVEMENT IN CHINA

The constructive forces at work in China, at the present time, are so potent and effective, as well as rapid in action, that the country is changing, almost visibly, before the eyes of observers of social conditions. The forces at work are not yet primarily economic and industrial. They are still intellectual, and, in a way, literary, and reforms are coming to pass through literary and intellectual media. This is quite in line with the traditional attitude of mind of the Chinese, whose civilization for

centuries has had a literary flavor, and who had a well-developed archeological and text-critical science when most of our ancestors were running around in the woods, dyed blue with woad.

It is not astonishing, then, that the student movement should be the first great wave of progress to sweep over the country, and that this student movement should be, at base, linguistic and literary. To understand the reforms in these disciplines, which are aimed at by the leaders of the student movement, it is necessary to know that the written Chinese, not merely in essay, poem and story, but even in letters of a purely business character, is so remote from the spoken language that one might compare the task of writing the Wenli, or literary form, to the task that would be imposed upon an American business man if he had to dictate all of his business correspondence in Old English or the language of Chaucer. The cleft between the spoken and the written language has become so great that the task of learning the written language is possible only to the few, and in a republic where an intelligent public opinion is required, fully ninety per cent. of the people are without a medium of written expression, and find the reading of what is printed almost impossible.

A movement something like the movement in Norway, some years ago, has taken place under the leadership largely of a Columbia Ph.D., Dr. Soo Hu. This movement, which is called the "Pei Hua" or "Vernacular Movement," aims to have everything which is written, written in the spoken language of the educated classes; not necessarily in the dialects of the peasants, but in a grade somewhat above their so-called "Earth Language." To be sure, the dialect to be written is not the dialect of each province, province by province, but is the Mandarin language, or a normalized and extended Pekingese. Even this, which is now being taught in schools in many parts of China, is almost a foreign language to the native of Fukien and Canton, and is difficult of attainment to the speakers of Wu dialects, north and south of Shanghai; but as China is a country in which the coastal fringe is the home of a bewildering multiplicity of vernaculars, some *lingua franca* must become widespread before that unity of the people can take place which is essential to a wide-awake republican form of government. It is for this reason that the young reformers lay such stress upon linguistic and literary reforms, and why their patriotism is so bound up with linguistic changes.

Their movement has striking parallels in this respect to the movements of Romantic groups in Europe, at the beginning of the nineteenth century; and they have carried the parallel further through their wide use of translations from all languages. Their general bent is, however, toward the more radical Russians, and the realistic school of fiction claims most of their attention. Chekhov, Dostoyefsky and Tolstoi are being read widely, and translated into Chinese. There is practically no attempt to learn Russian, though it would seem as if Russian were worth while, on account of the Siberian proximity to China; but English translations suffice, and are the basis of the new versions. The vogue of Nietzsche is said to be passing, but for a while he was very widely read. From the realistic Russians to naturalism, to an excessive emphasis on psychology, and from that to an interest in abnormal psychology and psychopathy, is but a step; and Freud and Havelock Ellis are well known to the younger generation.

A curious coincidence brought John Dewey to China in the midst of this movement. He is the teacher of Dr. Soo Hu and of some others in the student movement, and his influence is hardly to be overestimated. After his trip to Shansi, many students left the Provincial University to come down to Peking, to study under him, and in Shantung his influence was equally great, while in Peking his classrooms are crowded with eager hearers, who report that Dr. Soo Hu's interpretations of the lectures are masterly.

Vocational education and the pragmatic point of view are entirely the order of the day, and the influence of these doctrines upon

social and political thinking is the one great factor in the progress of the younger Chinese at the present time. The scientific bent of mind is being cultivated wherever it is found, and natural and social sciences are the favorite studies, though the Chinese are, by nature, not interested in those exact forms of mental discipline which are the basis of engineering, biology, etc. Patriotic feeling forces many young men to study things for which they have no liking, and to apply themselves with iron application, through long nights of hard labor, in order that they may learn something which they feel will be for the good of their native land.

On the political side, the first actual reform which has been accomplished by the student movement is the complete reorganization of the National University of Peking, which now has absolute faculty control, and the government of which is based upon the most advanced types of college and university government in the United States.[1] The President, Tsai Yüan Pei, himself a Han Lin, or old-form Chinese Ph.D., but trained in France and Germany, as well, and thoroughly awake to modern ideas, is in absolute sympathy with the younger men on his staff and with the student movement. He willingly sanctioned reforms which seemed to strip him of that autocratic power which Chinese college presidents, as well as their western confrères, seem to like. By doing this, Mr. Tsai has become the idol of the student class, and, through his critical and literary works, keeps their respect for his solid intellectual attainments.

The larger influence of the student movements upon the government was felt in 1919, when, after wrecking the house of the notorious Tsao Ju Lin, thirty-three of the rioters were imprisoned, and the whole student body struck for liberty, and to prevent the militarists from ratifying the Shantung Provisions in the Peace Treaty. Those who were deeply involved in this movement, through sympathy with the students, and as their counselors and guides, can never forget the thrill of enthusiasm which passed through the nation when it was found that thousands of young people in China were as capable of self-sacrifice and of united effort, as were the young people in other countries. The movement took on the exaltation of an almost religious fervor. The speeches were filled with a passion that left their orators limp and exhausted. At one public reading of the Twenty-one Demands, on the day of national shame, May 9, the passion rose to such a fervor that as the demands were read, clause by clause, the reader (a young Chinese student at the Boxer Indemnity College) became almost cataleptic in his passion, and the effect upon the audience was actually physical, before the Twenty-first Demand had been read. Imprisonment was endured without a murmer, and for the first time in the history of China, women students were equally patriotic with men. Women picketed the President's Palace, stayed out all night before it, and endured the same hardships as their brothers. It was this, perhaps, which made as much impression as anything about the movement upon the Chinese merchant public, which was forced by student enthusiasm to join in the strike, and to assist through the boycotting of Japanese goods. That the movement has lost some of its fervor, and that the patriotism has died down to some extent, is due, perhaps, to the excess heat with which it was carried on at first, and to the fact that the Chinese students, as a group, feel that the political situation of the world is not growing any better. Their cynicism takes the form of reliance upon a complete overthrow of all governmental forms, of a union with the Soviet Government in Russia; or, where the reaction is complete, there is a defeatism noticeable, which seems too willing to throw up the sponge, and turn everything over to Japan.

In the main, however, the students have learned that they are powerful, that the government is actually afraid of them, and have learned that they can carry on an effective

[1] According to the *North China Star* (Mar. 21, 1921) the Southern University which has grown out of the Nanking Higher Normal School, is to have an equally democratic organization. Its President is Dr. P. W. Kuo.

economic blockade of Japan, if they wish to. Their organs, *The New Tide*, *New Education* and *La Jeunesse*, to name the three principal ones, continue in spite of every attempt of the government to suppress them. They are filled with revolutionary articles, with social and sociological studies, with *vers libre*, and with religious and ethical articles, generally anti-missionary in tone.

The feeling against Japan has resulted in a certain general anti-foreign movement. The students feel their own power and their own ability. They wish, in general, to do the work which is now being done by foreigners, and there is the additional lure of the high salaries which highly trained foreigners in China receive. This anti-foreign movement naturally extends to the missionaries, whose labors are not entirely appreciated even by the more radical student groups. This one phase of the student movement is particularly unfortunate, because China will, for a long time, need foreign help and foreign friends.

GEORGE H. DANTON

EXCHANGE PROFESSOR FROM TSING HUA COLLEGE, PEKING, CHINA, AT NEW YORK UNIVERSITY

EDUCATIONAL EVENTS

RESOLUTIONS OF THE PENNSYLVANIA SCHOOLMEN'S WEEK CONVENTION

AMONG the resolutions passed at the final session of the Schoolmen's Week Convention are the following:

Resolved: That we declare ourselves in favor of a plan of progressive standards of preparation of all public school teachers, and we pledge ourselves to the performance of our full duty in helping to develop such public appreciation of the values of education as will provide moral and financial support for a real profession of teaching, and that we commend the forward step which our state normal schools and other institutions engaged in the preparation of teachers are taking and we again emphasize our faith in them.

Resolved: That we note with interest the apparent desire on the part of the members of the Legislature to provide revenue for education sufficient to remove the handicap under which we have been laboring many years. Notwithstanding this we feel it a duty to remind the people of the state that there is grave danger of over-confidence, and urge upon everybody the imperative necessity of getting back of Governor Sproul in his effort to secure revenues for education at least proportionate to those raised in our neighboring states. We, therefore, urge that the campaign now well under way be helped along in every legitimate manner possible until adequate revenue measures are enacted.

Resolved: That we believe that democracy demands the reorganization of rural and urban communities so as to give rural and urban people equal share in the control and benefits of municipal institutions.

Resolved: That we express our hearty approval of minimum salaries for teachers as proposed by the Edmonds Bill and that we protest against any attempt to reduce those minimums.

Resolved: That the State Department of Public Instruction be urged to fix a minimum standard of equipment without which no school should be permitted to operate.

Resolved: That we concur in the judgment of the committee in the strong emphasis placed upon educational measurements and the extension to the field of mental testing. We congratulate the School of Education of the University upon its share in bringing Pennsylvania to its high rank among the states in the important work of educational measurements.

Resolved: That we endorse the bill now before the Legislature providing for an educational council consisting of a body of competent men to study education in its various relations in order that it may intelligently guide the educational policies of the commonwealth.

Resolved: That we endorse the state plan for the establishment of junior high schools, believing that they will provide an opportunity for children to explore their abilities and to receive competent educational and vocational guidance.

EDUCATIONAL NOTES AND NEWS

OWING to the wide-spread compositors' strike for a forty-four hour week, it has not been possible to put in type notes and other material that would otherwise have been printed in the present issue.

DR. LOTUS D. COFFMAN was installed as president of the University of Minnesota with exercises extending through May 12, 13 and 14.

DR. RUTLEDGE T. WILTBANK, assistant professor at the University of Chicago, has been

appointed professor of psychology at Knox College, where he will establish a new department in psychology, the work in which has hitherto been done under the department of philosophy.

NICHOLAS RICCIARDI, district vocational officer under the Federal Board for Vocational Education, has accepted the presidency of the State Polytechnic School at San Luis Obispo. Mr. Ricciardi is known throughout Central California for his services in the Oakland schools.

PROFESSOR H. F. HARRINGTON, director of the courses in journalism at the University of Illinois, has been appointed director of the Medill School of Journalism at Northwestern University. A new four-year course leading to a degree in journalism is planned, as well as night courses for practical newspapermen.

PROFESSOR A. S. BARR, head of the education department of Evansville College, has resigned to take a position as supervisor of instruction in the Detroit public schools, at a salary of $5,000.

DR. DANIEL VARNEY THOMPSON, head of the English department of the Lawrenceville School, has been appointed to succeed Dr. D. O. S. Lowell, as headmaster of the Roxbury (Mass.) Latin School.

SUPERINTENDENT M. E. LIGON, Henderson, Kentucky, has been elected to the principalship of the high school at Ashland. During his administration of the Henderson Schools a junior high school has been organized in the old high-school building and the salary of the grade teachers has been advanced fifty per cent.

PROFESSOR ELMER E. JONES, of Northwestern University, sailed for Albania on May 25, where, as we have already reported, he will assist in establishing an educational system.

THE forty-seventh annual meeting of the Colorado Education Association to be held in Grand Junction from October 18 to 21, and at Pueblo and Denver from October 20 to 22, will be addressed by Dr. Claxton; Mrs. Aurelia Henry Reinhardt, president of Mills College, California; Dr. W. C. Bagley, professor of education, Columbia University, New York, and editor of *The Journal of the National Education Association;* and Hon. Will C. Wood, state superintendent of public instruction, Sacramento, California.

THE death is announced of Dr. W. K. Argo, president of the State School for the Deaf and the Blind, at Colorado Springs.

SPECIAL CORRESPONDENCE

PHYSICAL EDUCATION AT STANFORD UNIVERSITY

(From a correspondent)

IN connection with its summer work, Stanford University will give a six-weeks course, beginning June 1, for the training of leaders and instructors in various branches of physical education in public schools, high schools, colleges, community centers and playgrounds, church social and recreation enterprises, Y. M. C. A. and similar organizations, including the coaching of athletic teams. Experienced experts will have charge of classes in the theory and methods of teaching American, Rugby and soccer football, baseball, basketball, track and field sports, gymnastics, and public or community recreation. The courses will be offered by the regular University physical education staff aided by members of the Stanford School of Education, the Stanford biology department, and by Dr. Clark W. Hetherington, state supervisor of physical education; Dr. Herbert R. Stoltz, assistant state supervisor of physical education; and Frederick Rand Rogers, director of physical education in the Salinas High School.

The demand for coaches for high school teams and for school directors of physical education far exceeds the supply, especially in the West. Twelve states, including California, Washington, Oregon and Utah, have laws requiring physical education in the public schools, and similar laws are pending in other states. In addition the Fess-Capper bill now

before Congress proposes that the federal government shall appropriate ten million dollars for cooperation with the states in the establishment of physical education for all persons between six and eighteen, which will still further extend the demand for trained physical educators. Under such laws the present training resources of the nation will not supply the needs of one state like California. At present men high school instructors in California are getting $1,800 to $3,300, and large city schools are paying from $2,400 to $3,000.

Stanford, with its favorable geographical location and climatic conditions, its unexcelled equipment in numerous athletic fields, gymnasium and swimming pool, and its thoroughly trained and experienced physical education staff, is in a position to do in the West what Harvard and Columbia have been doing in the East, and Illinois in the Middle West and become the center for the training of such teachers.

Among the most interesting courses will be those offered by the coaches of the Stanford varsity teams. These men will give courses in methods of teaching in their own special fields. These instructors include Walter Powell, varsity football and basketball coach; Duffy Seay, baseball coach; Harry Malony, who will give instruction in teaching soccer, rugby, boxing, track and field. Seay will also give courses in swimming and water sports. Charles S. Botsford, who is now in charge of intramural activities at Stanford and has had experience in community recreation work, will offer courses in that branch.

In addition, the school of education and the physiology department will offer courses especially adapted to the needs of physical educators.

DISCUSSION AND CORRESPONDENCE

ASKING THE PARENTS

How can the school and the home cooperate more closely in organizing and directing the school activities of pupils? Those who direct the education of children must recognize that not only the time spent in school but that the whole day contributes to the education of these children. This question and the educational principle involved gave much concern to the Brooklyn Friends School in connection with its extra-curriculum program of after-school activities.

The school, under the direction of the Society of Friends, is one of the private day-school type, non-sectarian in its teachings and progressive in aim. It is for boys and girls from the kindergarten to college. One of the agencies helping in the cooperation between home and school is a very active Mothers' Club. Through this group of interested mothers the impetus came for an organized piece of cooperative work in the problem of after-school activities.

Not unlike schools of a similar type Brooklyn Friends School offers a number of athletic, educational and social activities after school. They are arranged to meet an older and younger group of girls and three groups of boys with enough variety to appeal to all and hold their attention at least one hour each school day. Briefly enumerated the program for one week would include the practise and games of the representative athletic teams, inter-class sports, educational trips, hikes, a swim at the Y. M. C. A., meetings of Leaders Club, organized classes, Boy and Girl Scouts, Junior Boys' Club, Science Club, School Paper, dancing class and supervised play in the gymnasium and playgrounds.

Around this program and its relation to the pupil's life and studies were framed the questions which the school thought it wise to have the parents face. Much care was taken to see that the matter was given a serious interpretation in the home through the teachers, Mothers' Club and the pupils themselves who helped in the distribution and collection of the papers.

The following questions were used and were sent to the parents of children above the second grade:

1. What do you consider the best hour for closing the daily school session?
2. Do you feel that your boys and girls need the guidance of the school in their after school hours?
3. Do you consider that the after school activi-

ties, as at present conducted by the school, fill this need?

4. How much time should be given to "outside activities" under school supervision?

5. (*a*) Do the present after school activities encroach upon the time which the students ordinarily would devote to home study?

(*b*) Do you feel that too much work is assigned?

6. Do these activities assist in offsetting the attraction of less desirable forms of amusement and recreation offered by the city?

7. Are these activities bringing results: (*a*) In wholesome enjoyment; (*b*) In increased skill; (*c*) In development of: "Group Spirit," "Good Sportsmanship," "Cooperation," "Loyalty"?

8. What seems to be his or her chief interest or "hobby" outside of school work?

9. How is your home emphasizing the development of character during the child's leisure time?

10. Do your boys and girls have a definite bed-time on school days? If so, what is it?

In the tabulation of the answers to the one hundred four questionnaires which were returned, the following results were obtained. They speak for the majority of the homes represented in the school.

Replies to the questions were as follows:

1. In general the present closing hours are satisfactory. 2.30 for primary grades, 2.45 P.M. for all above the fourth grade.

2. 7 feel that boys and girls need the guidance of the school in their after-school hours, 23 do not.

3. 67 consider that the after-school activities, as at present conducted, fill this need, 13 do not.

4. One hour is generally believed to be the time which should be given to "outside activities" under school supervision.

5. (*a*) 89 say that present after-school activities do not encroach upon time which students would ordinarily devote to home study; 6 think they do.

(*b*) 79 do not think that too much home work is assigned; 9 say there is too much. 13 say that sometimes there is too much assigned.

6. 75 declare that these activities do assist in offsetting the attraction of less desirable forms of amusement and recreation offered by the city, 10 think they do not.

7. To the question asking if these activities are bringing results, (*a*) In wholesome enjoyment, Yes—75, No—1. (*b*) In increased skill, Yes—59, No—1. (*c*) In development of "Group Spirit," Yes—66, No—1; "Good Sportsmanship," Yes—67, No—1; "Cooperation," Yes—64; "Loyalty," Yes—65.

8. Thirty different hobbies were listed including chemistry, wireless, chicken farming, music, magic, shopwork, dramatizing stories, etc.

9. About thirty methods of developing character during children's leisure time at home were listed. Among these were reading, music, Bible study, family prayer, precept and example, insistence upon regularity, neatness, thoughtfulness of others, family discussion.

10. The average bed-time of the children varies with the grades. Third, 7.56; Fourth, 8.00; Fifth, 8.30; Sixth, 9.15; Seventh, 9.30; high school I., 10.00; II., 10.00; III., 9.30; IV., 9.30.

From these results we would infer that in the majority of cases the hours of 2.30 and 2.45 are satisfactory, the present after-school program meets with approval, too much home-work is not assigned and the children are living normal, well organized lives. It would also seem that the school's effort is meeting a recognized need and is both adequate and effective in cooperation with the parents' idea and conception of this work. The study has done much to awaken interest and discussion of the leisure time problem of boys and girls and create greater interest and participation in the school program.

The Mothers' Club has since held a meeting to consider student initiative and the value of after-school activities. They invited a specialist to speak on these subjects. The innovation of afternoon motion pictures is one of their most recent projects. Close follow-up work has been instituted on the results of the questionnaire so that parents may be informed on the subject and cooperate more closely with the school.

Several parents, in their replies, took the opportunity to give a frank statement of the

circumstances existing between home and school. This cooperative relationship has been most helpful in creating a better understanding and more intelligent service.

Asking the parents, therefore, puts the test frankly up to them. Weak points are revealed and strong places discovered. The school has a definite answer regarding its effort to cooperate with the home in these matters. The home has a more intelligent appreciation of what the school is trying to do and is better able to know where it can help and how.

RUSSELL M. GRUMMAN
DIRECTOR, EXTRA-CURRICULUM ACTIVITIES,
BROOKLYN FRIENDS SCHOOL

THE WISCONSIN SUPERINTENDENCY

C. P. CARY, superintendent of public instruction in Wisconsin makes the following statement:

Yes, I am defeated. But just the same I love Wisconsin and the people of Wisconsin. My faith is unshaken in democracy and in a democratic administration of schools. The state has given me splendid opportunities for service and these opportunities have been used to the utmost of my ability for the best and highest welfare of the state, as I saw it. I have never consciously shirked a duty or used public trust for selfish benefit, or told the people anything other than what I believed to be true. In other words, I have a perfectly clear conscience as I look back over my eighteen years of service. It has been one constant effort and fight for educational improvement, regardless of personal consequences.

By way of illustration, we are, in the state of Wisconsin this year, under all of the adverse conditions, spending something like $8,000,000 on school buildings. A large percentage of this expenditure is due, in greater or less degree, to stimulus from this department varying all the way from mere suggestion and encouragement up to actual condemnation of old buildings. In one exceedingly unprogressive county in respect to buildings, we condemned in May, 1920, 27 country school buildings to be replaced by new ones by next fall.

Not a single district took an appeal as could have been done under the law, for everybody knew the condemnations were just. In this county, I was defeated two or three to one, and the progressive county superintendent of the county was defeated five to one. The story in regard to buildings could be duplicated in regard to equipment for school purposes. In every particular, this department has pushed a most aggressive campaign in the direction of educational progress.

It would have been perfectly easy for me to have obviated the present defeat, if I had cared more for office than for the performance of duty. I have known, as indeed everybody has known, that it is usually unsafe to press the people for money for any purpose. And yet I have constantly done so, because I regarded myself as attorney and advocate for the rights and welfare of children. Their best interest was a sacred trust. From a political point of view, this was no doubt suicidal, but from the professional point of view, there was nothing else to be done that was right and honorable. If it were to be done over, it would be done in the same way.

We have at this moment the best and most efficient state department of public instruction in the United States, without any exception. Every man and woman in the department has labored from a professional point of view day and night to bring the schools up to the highest point of efficiency. When the Ayres Report came out, it showed that for the year 1917–18 there were thirty-two other states that were paying more money for educational purposes than Wisconsin. If along with it we could have had a proper estimation of the efficiency of our schools, we would have stood at the top or near it.

We stand fourth among the states of the Union, according to a recent government report, in the percentage of children attending higher institutions of learning, and there are only eleven states better off than Wisconsin in respect to illiteracy. We have a better and more extensive system of training teachers than any other state in the Union, and we have a better system of supervision than any other state.

Usually, when an election is over it is over and nobody cares to discuss it, but it was not until this election was over that people began to talk and take an interest in it. Many people are dumfounded at the result. Everybody, without exception, to whom I have talked, expected the present state superintendent to be reelected, generally by about a two to one vote. Now they are asking what brought about this result. This is a problem for the people to solve for themselves, and it is worthy of their study. If it shall prove to have been due to a desire for more rapid progress

than we have been making, which means almost invariably greater expenditures of money, then the state may well be congratulated. If, on the other hand, it was reactionary, and motivated by a desire to save money and to industrialize education, the state may well pause to consider in what direction it is headed.

I have not the slightest ill will toward the public, and I only hope that the educational affairs of the state may go forward with steadily increasing efficiency. In my mind there is charity for all and malice toward none. What I shall do, I have not determined, but I sincerely hope that my lot may be cast in Wisconsin.

I bespeak for the new superintendent the good will and cooperation of all citizens in all worthy efforts to improve education—the greatest concern of every civilized people.

EDUCATIONAL RESEARCH AND STATISTICS

GROUP MENTAL TESTING IN ALTOONA, PA.

THE schools have too long neglected the individual differences of children. Too long there has been a struggle for uniformity—uniformity of teaching method, uniformity of disciplinary method, uniformity of courses of study, uniformity of texts—a struggle to meet the needs of the *average* child. Such a child does not exist. All children are different—different in capacity, different in interests, different in power of application, different in the outcomes of effort working on capacity.

There are two main causes of the elimination of pupils from school; one is the economic pressure of the times, the other is the interaction of the factors, mental capacity and minimum standards of requirement. With the discussion of economic pressure we are not concerned here. With the second cause of eliminaton we are now concerned. Our practises directly retard social progress. Variation, not uniformity, is the law of progress.

Not elimination of children from school, but accurate diagnosis of capacity and interests and placement according to capacity and interest is the supreme need.

Instead of uniform requirements courses of study must be made to suit capacities and

GROUP TESTING

DISTRIBUTION OF 6,774 PUPILS BY GRADES AND RAW SCORES

Raw Score	1 (898)	2 (820)	3 (834)	4 (883)	5 (969)	6 (724)	7 (696)	8 (950)
0	13	3	2	0	0		0	
1-5	202	55	10	5	2		0	
6-10	208	117	22	22	4		1	
11-15	191	147	81	41	11	1	1	
16-20	116	168	132	91	34	6	5	
21-25	73	143	159	100	72	24	13	3
26-30	49	81	148	130	128	42	40	18
31-35	23	52	108	161	169	89	65	53
36-40	18	27	88	143	163	114	82	87
41-45	5	9	41	95	127	102	85	110
46-50		8	26	52	96	108	104	163
51-55		5	10	21	72	79	92	133
56-60		5	5	12	46	75	66	124
61-65			0	4	28	26	54	75
66-70			2	2	10	26	35	54
71-75				1	4	14	18	53
76-80				1	2	8	18	46
81-85				2	1	5	8	17
86-90						4	1	13
91-95						1	3	3
96-100							3	3
101-105							0	
106-110							1	
111-115							0	
116-120							1	
121-125								
Median	11.7	18.6	26.4	32.6	38.0	44.5	48.7	52.7

DISTRIBUTION OF 6,774 PUPILS BY GRADES AND INTELLIGENCE QUOTIENTS (I. Q.)

Intelligence Quotient I. Q.	1 (898)	2 (820)	3 (834)	4 (883)	5 (969)	6 (724)	7 (696)	8
0	13	3	2	0	0	0	0	0
.01- .05	171	59	14	12	3	2	0	1
.06- .10	189	105	35	41	11	21	5	11
.11- .15	176	157	112	92	56	71	16	63
.16- .20	121	167	163	144	139	146	69	138
.21- .25	92	126	165	144	202	149	134	233
.26- .30	55	86	164	175	202	126	134	221
.31- .35	35	61	82	140	148	106	152	155
.36- .40	25	24	48	74	104	56	99	90
.41- .45	12	11	27	33	54	24	46	27
.46- .50	2	10	16	15	29	14	23	9
.51- .55	4	5	4	9	12	5	10	2
.56- .60	2	5	1	2	8	4	3	0
.61- .65	0	0	0	1	1	0	3	0
.66- .70	1	1	1	1			2	0
.71- .75								
.76- .80								
.81- .85								
.86- .90								
.91- .95								
.96-.100								
.101-.105								
.106-.110								
.111-.115								
Median	.132	.186	.237	.262	.278	.291	.306	.316

TABLE I

Median Raw Numerical Score and Median Intelligence Quotient for 6,774 Elementary School Children of Altoona, Pa.

A. By Grades Regardless of Chronological Ages

	Grades							
	I	II	III	IV	V	VI	VII	VIII
No. cases	898	820	834	883	969	724	696	950
Med. raw score	11.7	18.6	26.4	32.6	38.0	44.5	48.7	52.7
Med. intel. quotient	.132	.186	.237	.262	.278	.291	.306	.316

B. By Chronological Ages Regardless of Grades

	Chron. Ages											
	6	7	8	9	10	11	12	13	14	15	16	17
No. cases	399	745	709	802	707	782	778	807	641	330	58	16
Med. raw scores	9.1	16.5	22.9	28.4	33.6	39.0	43.3	47.2	49.3	49.5	50.4	47.9
Med. intel. quotient	.108	.180	.228	.247	.267	.273	.292	.297	.293	.279	.272	.235

interests. Failure in this regard eliminates thousands from the schools.

The minimum assignment must be measured by the capacity of each individual child.

Flexibility is the key word—flexibility in assignment of tasks, flexibility in promotion plans. Whenever it is discovered that a child should go faster or slower than his group he should have an adjustment in one of two ways, either a greater or less amount of work given him, or replacement in a higher or lower group. We have too long made June promotions the Niagara Falls of the child's progress. Let us rescue him up stream.

Feeling therefore that we should get away from present-day plans of promotion on the basis of uniform examinations on the basis of content which are largely tests of memory —memory sometimes stuffed with the undigested and indigestible, we have conscientiously sought to find a better way. We believe we have found it in the use of standard-

TABLE II

Median Numerical Raw Score for 6,774 School Children of Altoona, Pa., for Each of the Eight Elementary School Grades distributed by Chronological Ages. (Myers Mental Measure)

Age in Years	Grades							
	I	II	III	IV	V	VI	VII	VIII
6	8.94	15.2						
7	13.5	18.7	23.7					
8	13.7	19.0	26.8	36.6				
9	13.1	19.4	27.3	33.9	39.0			
10	13.5	15.7	23.6	32.3	38.9	47.8		
11		14.7	29.6	31.9	37.2	46.6	48.3	
12			25.0	32.1	37.1	44.3	50.8	50.0
13			26.0	25.0	38.4	47.2	47.1	54.1
14				24.7	45.7	46.4	49.1	51.6
15					39.0	41.4	52.9	51.8
16						36.8	49.0	59.3
17								48.5

TABLE III

Median Intelligence Quotient for 6,774 School Children of Altoona, Pa., for Each of the Eight Elementary School Grades distributed by Chronological Ages. (Myers Mental Measure)

Age in Years	Grades							
	I	II	III	IV	V	VI	VII	VIII
6	.109	.160						
7	.152	.204	.277					
8	.136	.189	.268	.349				
9	.110	.171	.239	.294	.341			
10	.118	.133	.194	.252	.306	.376		
11		.097	.226	.231	.272	.345	.340	
12			.205	.211	.255	.302	.333	.344
13			.200	.168	.239	.295	.285	.339
14				.147	.236	.262	.289	.300
15					.218	.224	.289	.293
16						.179	.235	.300
17								.247

ized tests and in the measurement of intelligence itself.

In May we administered the Myers Mental Measure to 6,774 children in the elementary schools. (The senior class of the high school also took the test.) We have long known that we have in the schools a great range of mental capacity, a great range of physical ages and a great range of mental ages, but the facts brought out in definite form furnish interesting and even startling data for study.

TABLE IV

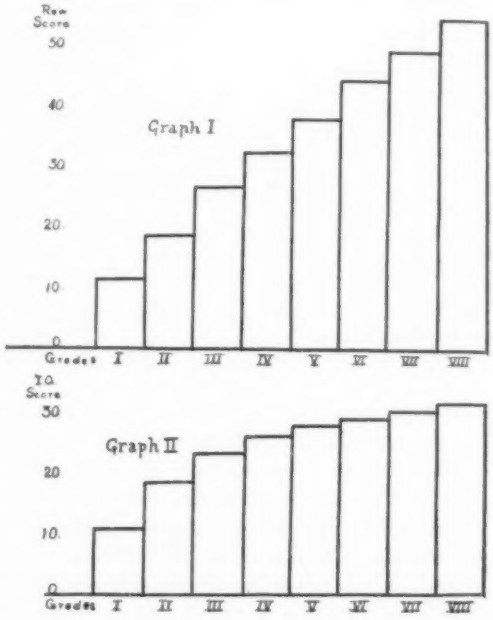
Distribution of 6,774 Children of the Elementary Schools of Altoona, Pa., by Chronological Ages, among the Several Grades

Age in Years	Grades								
	I	II	III	IV	V	VI	VII	VIII	Total
6	385	14							399
7	359	340	42	4					745
8	100	282	262	64	1				709
9	38	129	304	284	45	2			802
10	13	30	136	238	240	47	3		707
11	3	18	57	160	306	180	52	6	782
12		4	19	73	198	219	188	77	778
13		2	10	41	108	155	215	276	807
14		1	3	14	49	84	146	344	641
15			1	4	19	32	77	197	330
16				1	2	5	13	37	58
17					1		2	13	16
Totals	898	820	834	883	969	724	696	950	6,774

(Appended herewith are the Interpretations of Ratings by the Myers Mental Measure as reported to us by Mrs. Caroline E. Myers and Capt. Garry C. Myers to whom we are greatly indebted for valuable ascsistance.)

1. Table I. *A* and Graph I. show a gradual increase in median raw scores from the first grade upward. The step from the first grade to the second and second to the third are slightly greater than the succeeding step. This may be explained by the fact that the lower grade children are more handicapped by their poorer adaptation to such group performances as a group test demands. However the disparity is so small as to be practically negligible.

When, according to Table I. *A* and Graph II., the raw rating for each child is divided by that child's chronological age *in months* the medians of the resulting intelligence quotients show the few lower grades at a much greater disadvantage than is shown by

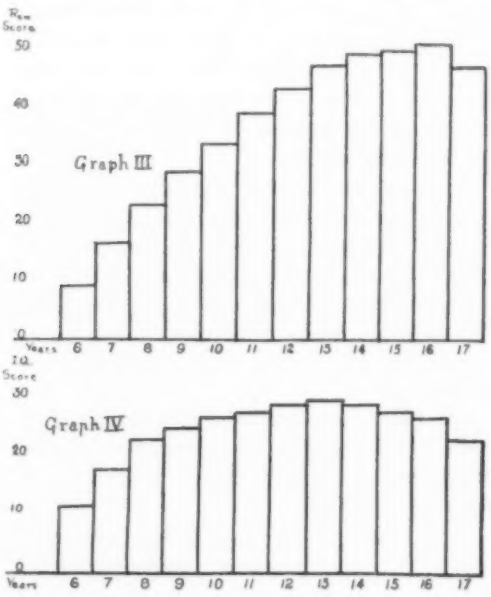


raw score. The relative exaggeration is due to the rather strange mathematical phenomenon attending the process of computing intelligence quotients. To illustrate suppose the given raw ratings from a given test for representative children for grades 1 to 6 were 12, 16, 20, 24, 28, 32, for example. Suppose their respective ages were 6, 7, 8, 9, 10, 11 years for the respective grades. Then the intelligence rating from scores divided by years would be 20, 23, 25, 27, 28, 29. Here it is seen that although the score increase is constant and that the age increase is contant, the increase in intelligence ratings successively grows less from grade to grade. From a large number of cases means could be devised for adding a given amount to each of the lower grades, *i. e.*, to each score before division; but such adjustment would not justify the labor.

It would seem that the raw score is more desirable than the intelligence quotients.

However, for classification within a given grade this does not hold good as demonstrated in an article of SCHOOL AND SOCIETY, September 20, 1919. The intelligence quotients take account of the repeaters better. Furthermore, the distribution of the intelligence quotient ratings within each grade are quite as good as if not better than the distribution of the raw ratings (see graphs) for each grade. For classification within a grade the intelligence quotient is more desirable. However, for comparison of grades and school systems the raw scores are probably preferable.

III. Distribution by chronological ages regardless of grades also gives a rather gradual increase from the highest to the lowest (Table I. *B*, Graph III.). Here again the lowest aged children, those in school but a brief time, are at a slight handicap. Another factor is introduced here, the diminished increment from the twelfth year onward and actual decrease in the seventeenth year. It must be remembered that only the elementary school children are included in these data. From the twelfth year onward there is naturally an increasing number of rapidly advancing children passng to the high school and by the seventeenth year this number is comparatively large. For example, there are only sixteen seventeen-year-old children left in the grades of the whole school system. It is safe to assume that these children are of relatively low-grade intelligence as revealed by the raw scores and intelligence quotients (Graphs III. and IV.) and that the children going on to high school are of relatively high intelligence. Furthermore the younger the children passing to the high school the greater the capacity of those children. Therefore the trend of the graph is what it ought to be if the scale is a fair measure of intelligence. When the raw scores are reduced to intelligence quotients (Graph IV.) the influence on the median scores by the elimination of the very rapid learners passing to the high school, is more pronounced. This relative disparity with the raw score graph deserves the same mathematical explanation as was offered above for the discrepancy between the graphs of median raw scores and median intelligence quotients for the grades.



IV. A further evidence that the Myers Mental Measure actually measures learning capacity is demonstrated by Tables II. and III. These data consistently show that the farther on in a grade a given child of a given age has progressed the higher will his rating be. For example, in Table II. one reads:

> The median nine-year-old child in grade I. made a score of 13.1; in grade II., 19.4; in grade III., 27.3; in grade IV., 33.9; in grade V., 39.0.

In like manner one reads in Table III.:

> The median nine-year-old child in grade I. has an intelligence quotient of .110; in grade II., .171; in grade III., .239; in grade IV., .294; in grade V., .341.

Furthermore the older a child is within a given grade the lower will his intelligence quotient be (excluding the six-year-old child). For this information read downward for each grade in Table III. However, Table II. shows the raw scores practically constant for the various ages within a given grade. The older child for his grade has a certain advantage in age and general experience because of which his total raw score hardly tells the

truth about his capacity. Hence the importance of reducing that score to a ratio of his chronological age. These data of Table II. eloquently plead for use of intelligence quotients for ranking learners within a given grade.

V. As an evidence that the Myers Mental Measure easily gets across even when given by a number of examiners is the fact that only 19 of all the 6,774 elementary-school children of Altoona failed to score. This total of 6,774 included 898 first-grade and 820 second-grade children, a number of whom were of foreign-speaking parentage.

VI. Incidental data of interest to the school administrator are contained in Table IV., which shows the distribution of 6,774 elementary school children according to ages among the grades. For example, the first-grade children range from the sixth to the eleventh year; the second grade, from the sixth to the fourteenth year.

VII. In interpreting all the data, especially in terms of ages, it must be remembered that only the children of the grades are considered and that the norms are always to be read with that in mind. So far as the practical school man is concerned he is interested only in the expected score of a given child of a given age in relation to his school grade. For example, he is not interested in the intelligence rating of any fourteen-year-old child whatsoever but of a fourteen-year-old child of grade 7 or 8, say. It is unfortunate however that all the high-school children were not tested in Altoona so that continuous age norms regardless of grades could have been completed.

CAROLINE E. MYERS,
GARRY C. MYERS

During the month of May we also gave individual tests to 144 pupils using Melville-Binet through the assistance of Miss Elizabeth Day and the courtesy of the Mental Hygiene Committee of the Public Charities Association of Pennsylvania and Professor Norbert J. Melville, assistant director. I have made the following recommendations on the basis of these mental surveys.

RECOMMENDATIONS

1. That a sufficient number of special opportunity classes be organized to care for such subnormal cases, with a specially trained psychiatrist as supervisor.

2. That special opportunity classes be organized for the supernormal children, under the trained supervisor.

3. That some flexible plan of parallel courses, possibly two in number, be worked out to accommodate two different sections of normal children in each room.

4. That these different groupings be based on intelligence quotients as well as school achievement.

5. That first-grade children shortly after entering school should be tested and grouped according to intelligence quotients.

6. That failure of promotion be reduced as nearly as possible to zero by changing pupils from one section, or one grade, to another as soon as that need is discovered.

7. That whenever a child enters school from other places, his intelligence quotient be determined as a guide to his proper placement.

8. That the lower 10 or 15 per cent. in the upper grades be carefully guided into courses other than academic, in which they can hardly ever hope to succeed. (This does not mean that the brightest mentally should not enter the vocational courses. The genius is needed in that field also.)

9. That as a result of knowing the capacity of children their habits of industry be kept up to the standard of their mental capacity. Thus idleness which has grown out of discouragement of some on the one hand, and the easy accomplishment of the task on the other, will be eliminated and discipline improved.

10. That the intelligence ratings of all high-school students be determined and sections in a particular subject formed on the basis of the I.Q's.

S. H. LAYTON,
Superintendent